



11<sup>th</sup> International Conference on

# Childhood Obesity and Nutrition

March 15-16, 2018 | Barcelona, Spain

# Workshop

# Day 1

Childhood Obesity 2018

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# Childhood Obesity and Nutrition

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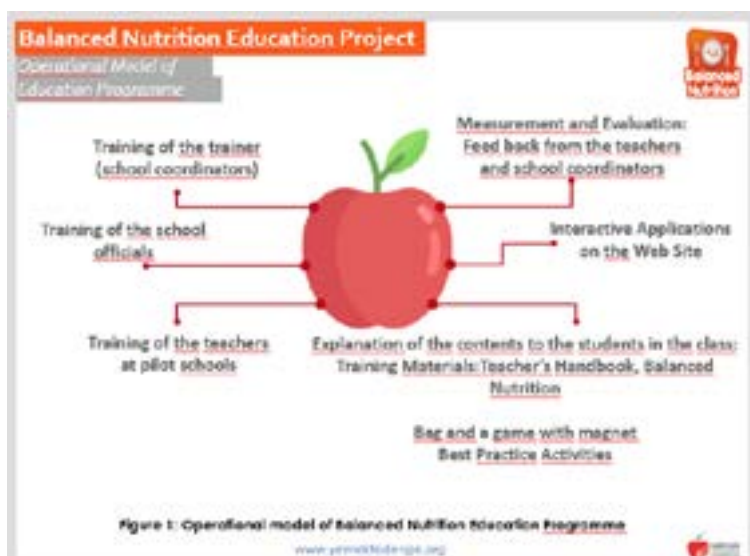


**Burcu Aksoy**

Sabri Ülker Foundation, Turkey

## Implementation of nutrition education programmes in schools: approaches from Turkey, UK and Spain

Nutrition education can provide individuals with the knowledge, skills and motivation to help them to make healthy dietary choices. Schools are an ideal setting for nutrition education because they are one of the main social contexts in which lifestyles are developed but schools are part of a network of influences which shape eating and activity patterns and attitudes. As an instance, school aged children develop behaviour through interaction with other pupils, teachers, parents, siblings and external influences such as the media. As well as nutrition education, schools also have many other means of contributing to good nutrition and health. School-based nutrition interventions can include learning experiences and other actions implemented by schools which make healthy nutrition a way of daily life, both at present and in the future. The Balanced Nutrition Education Project was established in 2011 by the Sabri Ülker Food Research Foundation in collaboration with the Turkish Ministry of Education's Elementary Schools General Directorate to contribute to developing healthy eating behaviors in school children in Turkey. The Balanced Nutrition Education Project is being implemented in 10 cities and 500 schools and in 4 different regions of the country and at present the 2017-2018 programmes is reaching 6 million students, teachers and parents (Figure1). The Food – a fact of life programme was devised by the British Nutrition Foundation (BNF) and originally launched in 1991. It provides resources to support food and nutrition teaching through a progressive learning framework, all of which are tested in schools. The programme also supports the professional training of teachers at primary and secondary school levels. In addition, BNF provides a healthy eating week for schools (and others) to help address whole school food issues – and in 2017, 9,681 schools registered representing 4.2 million children and young people (Figure 2). Programmes may lead to different outcomes in different countries, as a result of cultural differences and other factors; it is very useful to share experiences, which highlights the importance of networks such as BNF and Sabri Ülker Foundation to ensure communication and sharing of best practice.



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## References

1. Weichselbaum E (2013) Behaviour change initiatives to promote a healthy diet and physical activity in European countries. Nutrition Bulletin 38(1):85-99.
2. Schneider E and Theobald C (2016) Development and evaluation of food and nutrition teaching kits for teachers of primary schoolchildren. Nutrition Bulletin 41(1):55-66.
3. Ballam R (2017) British nutrition foundation healthy eating week 2017. Nutrition Bulletin 42(4):351-355.

## Biography

Burcu Aksoy has been Nutrition and Scientific Communication Executive since 2016. Prior to this position, she was Research Assistant in Department of Nutrition and Dietetics at Hacettepe University in Ankara, Turkey from 2007-2016. She completed her Graduation in Nutrition and Dietetics from Hacettepe University and MSc in Dietetics program of Institute of Health Sciences at Hacettepe University and PhD in Nutrition and Dietetics program of Institute of Health Sciences at Hacettepe University in 2010 and 2016 respectively. She studied the relation between plasma fatty acids, amino acids levels and the nutrition status of adults in her PhD.

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## Stacey Lockyer

Sabri Ülker Foundation, Turkey

### Implementation of nutrition education programmes in schools: approaches from Turkey, UK and Spain

Nutrition education can provide individuals with the knowledge, skills and motivation to help them to make healthy dietary choices. Schools are an ideal setting for nutrition education because they are one of the main social contexts in which lifestyles are developed but schools are part of a network of influences which shape eating and activity patterns and attitudes. As an instance, school aged children develop behaviour through interaction with other pupils, teachers, parents, siblings and external influences such as the media. As well as nutrition education, schools also have many other means of contributing to good nutrition and health. School-based nutrition interventions can include learning experiences and other actions implemented by schools which make healthy nutrition a way of daily life, both at present and in the future. The Balanced Nutrition Education Project was established in 2011 by the Sabri Ülker Food Research Foundation in collaboration with the Turkish Ministry of Education's Elementary Schools General Directorate to contribute to developing healthy eating behaviors in school children in Turkey. The Balanced Nutrition Education Project is being implemented in 10 cities and 500 schools and in 4 different regions of the country and at present the 2017-2018 programmes is reaching 6 million students, teachers and parents (Figure 1). The Food – a fact of life programme was devised by the British Nutrition Foundation (BNF) and originally launched in 1991. It provides resources to support food and nutrition teaching through a progressive learning framework, all of which are tested in schools. The programme also supports the professional training of teachers at primary and secondary school levels. In addition, BNF provides a healthy eating week for schools (and others) to help address whole school food issues – and in 2017, 9,681 schools registered representing 4.2 million children and young people (Figure 2). Programmes may lead to different outcomes in different countries, as a result of cultural differences and other factors; it is very useful to share experiences, which highlights the importance of networks such as BNF and Sabri Ülker Foundation to ensure communication and sharing of best practice.



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3. Ballam R (2017) British nutrition foundation healthy eating week 2017. *Nutrition Bulletin* 42(4):351-355.

## Biography

Stacey Lockyer worked in public health nutrition by the launch of the FSA's 5 A DAY campaign during her degree in Biology with Psychology at Royal Holloway, University of London and went on to study MSc Nutrition and Food Science at University of Reading, working on a human study looking into fish oil and vascular function for her dissertation. She spent the next two years as a Research Assistant investigating the effects of ApoE genotype and dietary fat manipulation on heart disease risk markers before starting her PhD studying olive leaf polyphenols, part of which involved a human study at Institute of Food, Nutrition and Human Health at Massey University in Auckland New Zealand. She was the Nutrition Society Student Member of Council for two years during her PhD which involved organizing conference events for student members along with writing for the Nutrition Society Gazette. After completion of her Doctorate degree, she worked at Royal College of Physicians as a Research Fellow, performing systematic reviews for the development of NICE Guidelines before joining the BNF as a Nutrition Scientist in June 2015.

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# Scientific Tracks & Abstracts Day 1

Childhood Obesity 2018

# Sessions:

Day 1 March 15, 2018

## Physical Activity | Nutrition & Metabolism | Behavioral & Environmental Factors | Child Nutrition

### Session Chair

**Elena Roura**

Alicia Foundation, Spain

### Session Co-Chair

**Ashley Knowell**

South Carolina State University, USA

### Session Introduction

**Title: The balanced nutrition education programme in schools in Turkey**

**Julian D Stowell**, Sabri Ülker Foundation, Turkey

**Title: Use of the muscle as a strategy for management of childhood obesity**

**Arèvalo Harold**, El Bosque University, Colombia

**Title: Early predictors of incipient metabolic syndrome in an Arab population**

**Waseem Samsam**, Anti-Doping Lab Qatar, Qatar

**Title: Evaluation of food behavior and nutritional status of pregnant women resident in**

**Keserwan - Lebanon**

**Yonna Sacre**, Holy Spirit University of Kaslik, Lebanon

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## The balanced nutrition education programme in schools in Turkey

Julian D Stowell, Burcu Aksoy Canyonlu, Deniz Miray Arca and H Tanju Besler  
Sabri Ülker Foundation, Turkey

The nutritional status of the Turkish population mirrors in other European countries and around the world. Turkey currently ranks second in Europe in terms of the number of overweight people. However, this overweight population is increasing more rapidly than elsewhere. Almost a quarter of seven and eight year old children in urban environments are now obese whilst in rural areas the figure is less at about 13-15%. The attendant risks of obesity including cardiovascular disease, type 2 diabetes, certain types of cancer and reduced quality of life and life-expectancy are well documented and are manifest at high levels in Turkey. In addition to the more obvious problems associated with obesity, several other nutrition related issues prevail in Turkey. These include, stunting of children due to malnourishment, which predominates in rural communities, running at about 5-6%, iodine deficiency which was recorded at 27.8% of the population in 2009 and high salt intake which, at 14.8 grams per day, is almost three times the recommended level. Turkey has a relatively young population in comparison with other European countries, providing an excellent opportunity to make a positive difference. Against this background the Sabri Ülker Food Research Foundation was established in 2009 with a view to improve public health in Turkey and beyond. A particular focus of the Foundation has been food, nutrition and physical activity education in schools. The balanced nutrition education programme was established in 2011 in collaboration with the British Nutrition Foundation (BNF). BNF education materials were adapted for local use by colleagues at the Faculty of Health Sciences, Hacettepe University in Ankara. The initial target was 2<sup>nd</sup> to 4<sup>th</sup> grade students but, spurred on by the success of the programme, students from preschool up to 8<sup>th</sup> grade are now included. Some 6 million students, their teachers and families have now been reached by the programme. Research has been undertaken to evaluate the impact of the programme and positive results have been achieved with respect to energy intake (reduced), weight management (improved) and physical activity, (increased). In 2017, the Balanced Nutrition Education Project won the most successful Corporate Social Responsibility (CSR Project) award, organized by Türkiye Sağlık Gönülleri Vakfi. Details of the programme and the results obtained will be provided.

### Biography

Julian D Stowell has retired as a Vice President of Scientific Affairs for DuPont, becoming a Consultant in Nutrition Science and Legislation. He has a background in biochemistry, holding degrees from Birmingham University, University of Kent and University of Hertfordshire, all in the UK. He has 40 years of experience in R&D, manufacturing, commercial and scientific roles in the food and pharmaceutical sectors. He is a board member of International Life Sciences Institute (ILSI) Europe, and in May, 2010 was appointed as a Visiting Research Professor at Oxford Brookes University Centre for Nutrition and Health, formerly Functional Foods Centre. He is a Fellow of Royal Society of Medicine (RSM) and Past President of RSM Forum on Food and Health. He has also chaired and participated in many other groups active in the field of Health and Nutrition.

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## Use of the muscle as a strategy for management of childhood obesity

**Arèvalo Harold**

El Bosque University, Colombia

Childhood obesity is a condition that has increased rapidly throughout the world, and many of the strategies proposed by different organizations have failed in that attempt. Of the activities that have important evidence to address this condition, are the physical activity and nutritional control, with some contributions of anti-inflammatory foods (Mediterranean diet). Based on this, the muscular system and its different physiological responses release of myokine, regulation of metabolic response, anti-inflammatory states, etc. It makes the muscular system one of the main tools for the control of childhood obesity. The process of transformation of this system and the neurohormonal response in different stages of life makes the muscle fiber dynamic. The release of a large number of myokine in sedentarism vs. physical activity generates changes in the metabolic regulation, and use of caloric expenditure. Another effect that has generated a positive evaluation in relation to physical activity is the mitochondrial functional improvement compared to prolonged sedentary states. We cannot leave aside the immune response and the control of the infiltration of macrophages at the level of the adipocytes that is mediated directly with the muscular intervention. You have to see the physical activity as a medicine, which must have a prescription according to the patient's needs, their age, clinical condition, physical capacity, among other characteristics.

### Biography

Arèvalo Harold is President of Sports Medicine Association of Colombia AMEDCO, Coordinator of Postgraduate degree - Sports Medicine specialty of El Bosque University. He is online leader and embroidery of childhood obesity. He is national and international speaker; author and co-author of different academic articles.

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## Early predictors of incipient metabolic syndrome in an Arab population

Waseem Samsam<sup>1</sup>, Noora Al Rasheid<sup>2</sup>, Shaika Al Sowaidi<sup>1</sup>, Amal Bashraheel<sup>1</sup>, Abeer Seyam<sup>1</sup>, Mohammed AlSayrafi<sup>1</sup>, Pasquale Vito<sup>1,3</sup> and Vidya Mohamed-Ali<sup>1</sup><sup>1</sup>Anti-Doping Lab Qatar, Qatar<sup>2</sup>University College London, UK<sup>3</sup>Università del Sannio, Italy

**Background:** Metabolic syndrome is defined by a constellation of abnormal metabolic factors that directly increase the risk for type 2 diabetes and cardiovascular disorders. In the Gulf Cooperation Council region, the prevalence of metabolic syndrome in the population is higher than in most developed countries, with generally greater rates for women, often higher than 40%. Thus, early clinical identification of patients is important to adequately implement treatments to reduce their risk of subsequent metabolic disease.

**Aim:** The aim of this study was to investigate the hypothesis that in sedentary subjects, post-prandial hyperinsulinemia, despite normal levels of glucose, is an indicator of incipient diabetes. Further this lesion is associated with markers of adipose and hepatic dysfunction.

**Methods:** 42 apparently clinically healthy residents of Qatar were studied. After a 10-hour overnight fast, subjects underwent a detailed clinical assessment, including body composition by bio-impedance, anthropometry measurements (height, weight and BMI), and blood pressure. A liquid mixed meal was administered (200 ml of 18 g proteins, 17.4 g fats and 40 g carbohydrates: total energetic value of 400 kcal) and blood sampling carried out prior to and 30 and 120 minutes after the meal. The study was approved by the Institutional Research Ethics Committee and all subjects provided written informed consent prior to participation. Fasting serum levels of lipids {high-density lipoprotein (HDL), low-density lipoprotein (LDL), total cholesterol, and triglycerides}; liver function markers [gamma-glutamyltransferase (GGT), alkaline phosphatase (ALP), alanine aminotransferase (ALT), aspartate aminotransferase (AST), total bilirubin (TB), direct bilirubin (DB), albumin (ALB)] and; plasma glucose, insulin and pro-insulin were also determined. HOMA-IR (Homeostasis model of assessment-insulin resistance) was calculated using the following formula: (fasting insulin in mIU/L\*fasting glucose in mmol/L)/22.5. Serum levels of leptin and adiponectin were measured using human 2-site ELISAs. All inter- and intra-assay CVs were less than 10%.

**Results:** There was no difference in age, blood pressure and body composition between the two groups. However, 48% of this population showed hyperinsulinemia in the fasting state, as well as relative hyperglycemia, hyperinsulinemia and hyperproinsulinemia 2 hours after the meal challenge. Systemic lipids and markers of liver function were comparable between the groups. Leptin was elevated in the hyperproinsulinemia group (26.1 ng/ml versus 20.9 ng/ml), this did not reach to significance. However, adiponectin was significantly lower in this cohort (5.8 mcg/ml versus 8.5 mcg/ml, P=0.002). Significant correlations were apparent between fasting insulin concentration and height, measures of body fat as well as muscle mass. In addition, fasting insulin also correlated significant with SBP, as well as all measures of glucose and HOMA-IR. Interestingly fasting insulin also correlated positively and significantly with liver enzymes. Inverse, but significant, association was found between insulin with HDL-C and adiponectin. Most of these relationships were lost in the postprandial state.

**Conclusions:** Thus, these data indicate that post prandial hyperinsulinemia and decreased adiponectin levels should be considered in the plethora of the altered biochemical parameters that define the metabolic syndrome. More importantly, since these biochemical alterations occur in seemingly healthy residents, they may well be considered early biomarkers of incipient metabolic syndrome. The reason for this lesion in a young and healthy population is likely to be the consequence of a sedentary lifestyle. Exercise and training can improve both insulin resistance and increase adiponectin and should be actively advocated for this population.

### Biography

Waseem Samsam is a Physician and working in anti-doping lab Qatar for four years in Life Science and Research department. His field is more about the physiological studies for diabetes and pre-diabetes status.

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## Evaluation of food behavior and nutritional status of pregnant women resident in Keserwan - Lebanon

**Yonna Sacre**

Holy Spirit University of Kaslik, Lebanon

Pregnancy, this particular moment in the life of a woman, requires monitoring of eating behavior changes. However, the food choices during pregnancy should be healthy, including the consumption of different food groups, and nutritional status is the process of acquisition and consumption of food. So a varied diet is associated with good nutritional status. This is why the nutrition education is a strategy commonly applied to improve maternal nutrition during pregnancy. Therefore, it is crucial to assess the eating behavior and nutritional status of pregnant women living in Keserwan. The purpose of this study is to evaluate the feeding behavior, nutritional status and level of awareness of pregnant women residing in Keserwan. A cross-sectional descriptive study is carried out, two main types of research instruments. A questionnaire containing socio-demographic, personal information, questions on eating behavior, food frequency and nutritional education as well as laboratory tests already done by pregnant women. The total sample surveyed included 150 pregnant women between the ages of 18 and 40 years randomly selected from the hospitals and clinics of the Keserwan gynecologists and allocated in an equitable manner between two regions chosen according to altitude. The final analysis led to the results obtained 48.7% of pregnant women aged 30 to 40 years, 56% have a normal BMI between 18.5 and 24.9, 80.7% have acceptable food behavior, 68% have an acceptable level of awareness and half have an acceptable nutritional status. Thus age affects the eating behavior, so more pregnant women are older plus they have good eating behavior. It would be possible to institute an awareness-raising program in the aim of increasing the level of education of pregnant women with regard to eating behavior and nutritional status.

### Biography

Yonna Sacre completed her PhD from Humboldt University in Berlin and Master Degree in Human Nutrition and Dietetics from Saint Joseph University Beirut. She is actually an Assistant Professor at Holy Spirit University of Kaslik, teaching different human, lifecycle and community nutrition courses. She is Member of the Lebanese National Nutrition Exam Committee and Jury Member and President of several master theses' defense committees at USEK-Kaslik, Lebanon.

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### Notes:

## Sessions:

Day 1 March 15, 2018

### Obesity and Heart disease | Exercise & Kinesiology | Genetics and Obesity | Child Nutrition

**Session Chair**

**Elena Roura**

Alicia Foundation, Spain

**Session Co-Chair**

**Ashley Knowell**

South Carolina State University, USA

#### Session Introduction

**Title: Analyzing the role of high pro-inflammatory diets and childhood obesity in the risk of adult carcinogenesis in South Carolinian children**

**Ashley Knowell and Shanora Brown**, South Carolina State University, USA

**Title: Comparison of snack composition in obese and normal weight children**

**Mehnoosh Samadi**, Kermanshah University of Medical Sciences, Iran

**Title: Does dietary calcium intake is effective in regulating body weight in children?**

**Mehnoosh Samadi**, Kermanshah University of Medical Sciences, Iran

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## Analyzing the role of high pro-inflammatory diets and childhood obesity in the risk of adult carcinogenesis in South Carolinian children

Ashley E Knowell and Shanora Brown  
South Carolina State University, USA

In the United States, childhood obesity has been a growing epidemic with, 1/3 of US children considered overweight or obese. This increased number can be linked to several factors including nutrition and social economic status. Households that do not have access to healthy, nutritious foods are significantly more likely to be obese earlier in life. Obesity in children can lead to numerous health complications such as diabetes, high blood pressure, chronic inflammation and carcinogenesis. African American is more likely to be diagnosed and die from some forms of cancer. Therefore, eliminating or reducing preventable risk factors such as unhealthy nutrition and childhood obesity could have important implications for reducing clinical manifestations of adult cancer outcomes. Areas of South Carolina, such as the I-95 Corridor, have a long history of being under-developed which contribute to numerous problems such as obesity, poverty and sub-par health care. We have enrolled SC children from varying degrees of rurality to determine if obesity and/or high-fat pro-inflammatory diets contribute to increased levels of pro-inflammatory markers and obesity related genes to include: Adiponectin, leptin, SAA1 /2, Interleukin 1 and 6. Subjects will be randomized into obese and non-obese groups based on BMI guidelines. The transcriptional levels of pro-inflammatory genes will be measured by quantitative RT-PCR. Reducing childhood obesity and pro-inflammatory diets are beneficial in the reduction of cancer risk and will serve as preventive measures for early-stage onset of adult cancers. Data analysis on the limited sample set is ongoing. Results will be presented during the conference.

### Biography

Ashley E Knowell is investigating the role of childhood obesity as a risk factor for adult cancers. The ultimate goal of the project is to provide families with the necessary tools and information to establish healthy nutritional habits; reduce childhood obesity and; ultimately reduce adult cancer risk among South Carolinian children. Her research interests also include tumor suppressors, cell death and the development, progression, and treatment of cancer in African-Americans and South Carolinians. She completed her Graduation from Clark Atlanta University.

Shanora Brown has actively been involved in the study of prostate cancer, molecular mechanisms of tumor progression as well a genetic factors contributing to the disparities in cancer among diverse populations. Her current research focus is investigating and understanding the link between nutrition and childhood obesity as a risk factor for adult carcinogenesis in South Carolinian children. Ultimately, eliminating or reducing preventable risk factors such as unhealthy nutrition and childhood obesity could have important implications for reducing clinical manifestations of adult cancers, such as breast and prostate.

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## Comparison of snack composition in obese and normal weight children

**Mehnoosh Samadi and Amir Bagheri**

Kermanshah University of Medical Sciences, Iran

In developing countries as a result of urbanization, lifestyle and modernization, the obesity as a risk for health problems increases. The purpose of this study was to determine the association between obesity and energy and nutrient intake and distribution of energy throughout the day. This cross-sectional study was conducted in 410 girls aged 10-8. Height and weight were measured and BMI was calculated. Body fat using the Body Composition Analyzer (BCA) was measured, total energy intake, percentage of energy from protein, carbohydrate and fat and energy content of each meal and snack obtained using three food records were assessed. Percent calories from fat in overweight and obese children and in children with higher fat mass, significantly more than children of normal weight (mean±SD respectively: 35.4±8.5 compared to 28.7±7.6). Percentage of energy intake from breakfast was lower in overweight and obese children than normal weight children (mean±SD respectively: 12.9±6.9 compared to 19.8 ±5.7) and percentage of energy intake from lunch and evening snacks compared to normal weight children were more (mean ±SD respectively: 40.8±8.9 and 15.2±5.5 compared to 35.7±9.7 and 11.2±6.3) and children with normal weight, have more energy intake from morning snacks (mean±SD respectively: 6.2±5.4 compared to 4.1±3.4). This study showed obese and overweight children's snacks had higher amounts of fat and snacks for children with normal weight had greater amounts of fruit and the use of low-energy snacks to prevent obesity in children's diet can have an important role.

### Biography

Mehnoosh Samadi has completed her PhD from Ahvaz Jundishapur University of Medical Sciences. She is the Assistant Professor of Nutritional Science department in the School of Nutritional Science and Food Technology of Kermanshah University of Medical Sciences, Kermanshah, Iran. She has published more than 10 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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## Does dietary calcium intake is effective in regulating body weight in children?

**Mehnoosh Samadi and Amir Bagheri**

Kermanshah University of Medical Sciences, Iran

**F**at Mass Index (FMI) relates body fat mass to height and allows comparing body fat mass of individuals at different heights. In this study, dietary calcium intake and some nutritional factors in obese children aged 8-10 were investigated. In this study, 580 children with FMI at or above the 90th percentile of age-specific data (FMI 6.9 kg/m<sup>2</sup>) are known as obese in case group and 600 children with FMI less than the 90th percentile are known as normal weight in control group was classified. In this study, body fat mass was measured by bio impedance analyzer and for calcium intake; we used a validated food frequency questionnaire. In the case group calcium intake was significantly lower than the control group (574±112 and 836±161 mg/d) (P<0.01), respectively. In this study, we use three model of logistic regression. In model one, after adjustment for total energy intake and the percentage of energy from macronutrients inverse association between calcium intake and obesity was significant. In model two by further adjustment for the effect of fruits and vegetable intake inverse association between calcium intake and obesity was significant and in model three by further adjustment for the effect of physical activity level inverse association between calcium intake and obesity became weaker but yet was significant. Even after controlling for confounding factors the inverse relationship between calcium intake and FMI remained significant. In this study, we showed that FMI may be a more accurate index that shows the association between calcium intake and obesity.

### Biography

Mehnoosh Samadi has completed her PhD from Ahvaz Jundishapur University of Medical Sciences. She is the Assistant Professor of Nutritional Science department in the School of Nutritional Science and Food Technology of Kermanshah University of Medical Sciences, Kermanshah, Iran. She has published more than 10 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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# Scientific Tracks & Abstracts Day 2

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## Sessions:

Day 2 March 16, 2018

### Physical activity | Nutrition & Metabolism | Behavioral & Environmental Factors | Child Nutrition

#### Session Chair

**Burcu Aksoy**

Sabri Ülker Foundation, Turkey

#### Session Co-chair

**Waseem Samsam**

Anti-Doping Lab Qatar, Qatar

#### Session Introduction

**Title: Fat mass index or body mass index; which is more accurate in diagnosing childhood obesity?**

**Mehnoosh Samadi**, Kermanshah University of Medical Sciences, Iran

**Title: School-based intervention to enable school children to act as change agents on weight, physical activity and diet of their mothers**

**Susantha Indrawansa**, The Foundation for Health Promotion, Sri Lanka

**Title: The association between nutritional supplements and body mass index (BMI) in children in pediatric intensive care unit**

**Mehnoosh Samadi**, Kermanshah University of Medical Sciences, Iran

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## Fat mass index or body mass index; which is more accurate in diagnosing childhood obesity?

**Mehnoosh Samadi and Amir Bagheri**

Kermanshah University of Medical Sciences, Iran

As for increasing prevalence of obesity in children, it is essential to use a measure that accurately diagnoses obesity in children. The purpose of this study was to determine the sensitivity and specificity of body mass index (BMI) compared to fat mass index (FMI) as a measure of child actual obesity. This cross-sectional study was conducted in 580 girls aged 8-10. In this study, FMI at or above 90th percentile of age specific data (FMI 6.9 kg/m<sup>2</sup>) are known as obese and FMI less than 90th percentile are known as normal weight. ROC curves to evaluate performance BMI against FMI was used to determine the actual obesity. The kappa test was done to determine whether the two criteria were used to define obesity in children. Mean and SD BMI and FMI in children was 19.4±3 (kg/m<sup>2</sup>) and 6±2.1 (kg/m<sup>2</sup>) respectively. The area under the ROC curve 83% was calculated and the sensitivity and specificity and cut-off point of BMI compared with FMI was calculated 21.2 kg/m<sup>2</sup> and 59 percent and 97 percent. The agreement between BMI=21.2 kg/m<sup>2</sup> and FMI=6.9 kg/m<sup>2</sup> to determine obesity was 0.5. In this study, the BMI sensitivity was poor and only 59% of the children who were obese based on FMI, were also obese based on BMI and 3% of the children, who were identified as non-obese based on FMI, were obese based BMI. FMI seems more accurate measure of obesity than BMI is, however, more research is needed in this area.

### Biography

Mehnoosh Samadi has completed her PhD from Ahvaz Jundishapur University of Medical Sciences. She is the Assistant Professor of Nutritional Science department in the School of Nutritional Science and Food Technology of Kermanshah University of Medical Sciences, Kermanshah, Iran. She has published more than 10 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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## School-based intervention to enable school children to act as change agents on weight, physical activity and diet of their mothers

**Susantha Indrawansa**

The Foundation for Health Promotion, Sri Lanka

**Background & Aim:** School health promotion has been shown to improve the lifestyle of students, but it remains unclear whether school-based programs can influence family health. We developed an innovative program that enables school children to act as change agents in promoting healthy lifestyles of their mothers. The objective of this study was to examine the effect of the child-initiated intervention on weight, physical activity and dietary habit of their mothers.

**Methods:** A 12-month cluster randomized trial was conducted, with school as a cluster. Participants were mothers with grade eight students, aged around 13 years, of 20 schools in Homagama, Sri Lanka. Students of the intervention group were trained by facilitators to acquire the ability to assess non communicable disease risk factors in their homes and take action to address them, whereas those of the comparison group received no intervention. Body weight, step count and lifestyle of their mothers were assessed at baseline and post-intervention. Multi-level multivariable linear regression and logistic regression were used to assess the effects of intervention on continuous and binary outcomes, respectively.

**Results:** Of 308 study participants, 261 completed the final assessment at 12 month. There was a significantly greater decrease of weight and increase of physical activity in the intervention group. The mean (95% confidence interval) difference comparing the intervention group with the control group was  $-2.49$  ( $-3.38$  to  $-1.60$ ) kg for weight and  $-0.99$  ( $-1.40$  to  $-0.58$ ) kg/m<sup>2</sup> for body mass index. The intervention group had a 3.25 (95% confidence interval 1.87–5.62) times higher odds of engaging in adequate physical activity than the control group, and the former showed a greater number of steps than the latter after intervention. The intervention group showed a greater reduction of household purchase of biscuits and ice cream.

**Conclusions:** A program to motivate students to act as change agents of family's lifestyle was effective in decreasing weight and increasing physical activity of their mothers.

### Biography

Susantha Indrawansa has completed Diploma in Health Promotion at Rajarata University and Diploma in Human Resource Management at Ceylinco Business School. He has 21 years of experience on community based intervention from 1996. Currently, he is Executive Director of The Foundation for Health Promotion. He has done several researches such as cardiovascular health research in developing countries at Center for Chronic Disease Control and; baseline and end line survey on weight reduction programme in Homagam conducted at National Center for Global Health and Medicine. He has several publications and attended various international conferences such as: Joint International Tropical Medicine meeting 2012 in Thailand and; Joint International Tropical Medicine meeting 2013 in Thailand.

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### Notes:

11<sup>th</sup> International Conference on

# Childhood Obesity and Nutrition

March 15-16, 2018 | Barcelona, Spain

## The association between nutritional supplements and body mass index (BMI) in children in pediatric intensive care unit

**Mehnoosh Samadi and Amir Bagheri**

Kermanshah University of Medical Sciences, Iran

Because of the direct relationship between malnutrition among ICU-hospitalized patients and the delay of recovery, the most important action rehabilitation service for these patients while stabilizing the basic indicators is providing nutrients especially energy requirements. When the patient's need for energy is growing increasingly, the best strategy is to use nutritional supplements. In this study, dietary intake in PICU children was studied and the effects of a dietary supplement in the prevention of weight loss in pediatrics were evaluated. In this cross-sectional study the study population was 880, 10-13 years old children in pediatric intensive care unit (PICU). Peptamen complete was used (1 kcal/ml, 16% protein (whey), 50% carbohydrate, 34% fat). Body weight and height were measured and BMI was calculated. Total energy intake and the percentage of energy from macronutrients and also nutritional supplements intake were measured using three food record questionnaires. Compared with the children in the lower quartile of nutritional supplements intake, children in higher quartile had a greater BMI ( $P < 0.01$ ). In this study, we use logistic regression and adjusted the effects of confounding factors. After Adjustment for the percentage of energy from fat the inverse association between BMI and nutritional supplements intake reached statistically levels significant (OR in quartiles 0.90, 0.88, 0.81, 0.77), ( $P < 0.05$ ). Since all the energy needs of the children in ICU with regular diet is hardly supplied and energy intake in the form of liquid supplements is better tolerated in these patients, the use of dietary supplements is suitable to meet their nutritional requirements.

### Biography

Mehnoosh Samadi has completed her PhD from Ahvaz Jundishapur University of Medical Sciences. She is an Assistant Professor of Nutritional Science department in the School of Nutritional Science and Food Technology of Kermanshah University of Medical Sciences, Kermanshah, Iran. She has published more than 10 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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### Notes:

11<sup>th</sup> International Conference on

# Childhood Obesity and Nutrition

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## An investigation of causal relationship between age at introduction of formula feeding or solids and incidence of childhood overweightness or obesity in Greater Western Sydney Australia: A prospective cohort study

Haider Mannan<sup>1</sup> and Praween Senanayake<sup>2</sup><sup>1</sup>Translational Health Research Institute-Western Sydney University, Australia<sup>2</sup>Western Sydney University, Australia

**Background:** Epidemiological evidence suggests that timing of introduction of formula-feeding or solid foods may be associated with subsequent overweight or obesity, and the association may vary by any breastfeeding at first year for four months or more versus not.

**Methods:** We included 346 infants from South Western Sydney using the Longitudinal Study of Australian Children (LSAC) who at baseline examination were singleton births, neither overweight nor obese (weight for age < 97.7<sup>th</sup> percentile), and were full term births (gestational age > 39 weeks). The primary outcome was time to the occurrence of first overweight or obesity at ages 2, 4, 6, 8 and 10 of the child. Risk of overweight or obesity was defined as body mass index (BMI) ≥ 85<sup>th</sup> percentile, using the National Centre for Health Statistics curves. The primary exposure variable of interest was age at introduction to formula or solid foods (< 4, and ≥ 4 months). Missing data were estimated using multivariate normal imputation (MVNI) based on 25 imputations. We used Cox proportional hazards regression to assess the temporal association between age at introduction to formula or solids and the timing of occurrence of incident overweight or obesity at ages 2, 4, 6, 8 and 10 of the child and test whether the association between age at introduction to formula or solids and timing of occurrence of incident overweight or obesity was modified by any breastfeeding at first year (≥ 4 months versus not); with and without adjusting for mother's BMI, age, education during pregnancy, race and social disadvantage (SEIFA).

**Results:** The risk of overweight or obesity was significantly higher among infants introduced to formula or solids at < 4 months compared to those introduced at ≥ 4 months in both unadjusted and adjusted analyses. We found strong interaction between age at formula or solids introduction and breastfeeding for four or more months and subsequent risk of incident overweight or obesity. The risk of overweight or obesity by age at formula or solids introduction decreased with increase in any breastfeeding duration to four or more months.

**Conclusions:** Timing of introduction to formula or solids within four months was a risk factor of incident childhood overweight or obesity for children 10 years later; so increasing the prevalence of exclusive breast-feeding to more than four months would be a worthwhile public health measure. Increasing any breastfeeding duration to at least four months would help to further decrease the risk of childhood overweight or obesity.

### Biography

Haider Mannan is a Biostatistician and Epidemiologist having subject knowledge of comorbid obesity and eating disorders among Australian adults as well as obesity as a risk factor of diabetes, cardiovascular diseases and disability. He has been developing research track record in the broad area of obesity research with his recent interest and focus been on eating disorders among obese adults in the South Australian population. He has published his papers in some top ranked obesity and epidemiology journals which include *International Journal of Obesity*, *American Journal of Epidemiology*, *Obesity and Annals of Epidemiology*.

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# Young Researchers Forum Day 2

Childhood Obesity 2018

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# Childhood Obesity and Nutrition

March 15-16, 2018 | Barcelona, Spain

## Evaluating the expression of known pro-inflammatory and obesity markers in prostate cancer

Maya Barbour, O'Quan Cross, Timothy Green, Shanora Brown and Ashley Knowell  
South Carolina State University, USA

In the United States, childhood obesity has been a growing epidemic with, 1/3 of US children considered overweight or obese. The increased number of overweight and obese children can be linked to several factors including nutrition and social economic status. Households that do not have access to healthy, nutritious foods are significantly more likely to be obese earlier in life than other children. Obesity in children can lead to numerous health complications such as diabetes, high blood pressure, chronic inflammation and carcinogenesis. African American minorities are more likely to be diagnosed and die from one of the various forms of cancer. Therefore, eliminating or reducing preventable risk factors such as unhealthy nutrition and childhood obesity could have important implications for reducing clinical manifestations of adult cancer outcomes. In order to understand the implication of inflammation in the participants, we first analyzed the expression of the inflammation biomarker in prostate cancer cells, used as our baseline data. The pro-inflammatory markers and obesity related genes investigated include adiponectin, leptin, SAA1 /2, interleukin 1 and 6. The transcriptional levels of pro-inflammatory genes were measured by quantitative real-time polymerase chain reaction. The results indicated that the expressions of chronic inflammation markers were increased in cancer DNA as compared to normal DNA. Overall reducing childhood obesity and pro-inflammatory diets while increasing physical activity and access to healthy foods are beneficial in the reduction of cancer risk and will serve as preventive measures for early-stage onset of adult cancers.

### Biography

Maya Barbour is a senior Biology Major at South Carolina State University from Charleston, South Carolina. She has plans of attending graduate school. She has been actively engaged in research for the past four years. O'Quan Cross is a senior Nutrition Major at South Carolina State University from Greenville, South Carolina. He has plans to pursue a Master degree in Nutrition or Food Science. He has been actively engaged in research for the past four years.

### Notes:

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# Childhood Obesity and Nutrition

March 15-16, 2018 | Barcelona, Spain

## Expression of chronic inflammatory markers in South Carolinian children

Taiwo Biotidara, Sydney Spry, Shanora Brown and Ashley Knowell  
South Carolina State University, USA

The increased number overweight and obese children in the United States and specifically South Carolina can be linked to several factors which include but are not limited to nutrition, socioeconomic status and access to health care. Obesity is a major health concern as it is a precursor to many diseases in children; obesity can lead to numerous health complications such as diabetes, high blood pressure, chronic inflammation and carcinogenesis. Therefore, saliva samples from two different counties (Chesterfield county and Newberry county) with varying degrees of rurality (rural vs. very rural) were analyzed to determine if obesity and/or high fat inflammatory diets contribute to increased levels of pro-inflammatory markers and obesity related genes in children ages 2-19. Based on a review of literature, a list of 12 genes was grouped according to their degree of inflammation into two categories either chronic or acute. The DNA collected from the participants was used to detect expression levels of chronic inflammation markers (IL-16, IL-12b chronic and SAA2). The procedure involved extracting RNA from samples collected, followed by reverse transcription after which a PCR (Polymerase Chain Reaction) was used to investigate gene expression. Increased expression was found in participants that ate high fat/proinflammatory diets, irrespective of weight class (normal, overweight, obese). Project is ongoing and data is still being collected.

### Biography

Taiwo Biotidara is a senior Biology Major at South Carolina State University from Lagos, Nigeria. He has been actively engaged in research for the past four years. Sydney Spry is a senior Biology Major at South Carolina State University from Miami, Florida. She has plans of attending graduate school to pursue a degree in Cancer Biology. She has been actively engaged in research for the past four years.

Notes:



11<sup>th</sup> International Conference on

# Childhood Obesity and Nutrition

March 15-16, 2018 | Barcelona, Spain

## Implication of childhood obesity and high pro-inflammatory diets in South Carolinian children: Survey and data stratification

Dejah Thomas, Richard Drayton, Shanora Brown and Ashley Knowell  
South Carolina State University, USA

In South Carolina, childhood obesity is growing at an alarming rate surpassing the national average. 40% of children in SC are classified as either overweight or obese. The rise of childhood obesity in the US is astounding due to factors such as socioeconomic status and poor nutritional choices. In SC, counties located within the I-95 corridor, commonly referred to as the corridor of shame, due to years of being severely underfunded and underdeveloped; thereby, contributing to a variety of problems such as poverty, lack of health care, poor health choices, and obesity. Childhood obesity can lead to numerous health complications in adulthood that includes diabetes, high-cholesterol, chronic joint pain, and cancer. The purpose of this study is to address the epidemic of childhood obesity in SC. If the preventable risk factor of childhood obesity is targeted, it could play a significant role in reducing the number of adult cancer cases. Our study is enrolling South Carolinian children from varying degrees of rurality and backgrounds to determine if obesity and/or high-fat pro-inflammatory diets contribute to the increased level of pro-inflammatory markers, which in turn contributes to long-term chronic inflammation leading to increased adult carcinogenesis. A screening survey, which gives a snapshot of the participant's nutritional, physical activity background and demographics, has been developed and a fully integrated mobile app will be launched. Participants recruited from six counties will be stratified by rurality, lifestyle factors and socioeconomic status to assess the effect of these exogenous factors on adult cancer risk.

### Biography

Dejah Thomas is a senior Biology Major at South Carolina State University from Atlanta, Georgia. She has plans of attending medical and/or graduate school. She has been actively engaged in research for the past four years. Richard Drayton is a Sophomore Computer Science at South Carolina State University from Yamasee, South Carolina. He has been working on App development for the past few years. He has been actively engaged in research.

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